

Colorado Department of Public Health and Environment

Hazardous Materials and Waste Management Division

Comments

on

DRAFT FINAL

TECHNICAL MEMORANDUM NO. 9

(CHEMICALS OF CONCERN)

FOR

OPERABLE UNIT NO. 2

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

August 1994

Page 3-3 Even though the original source of PAHs may not have been within OU2 itself, they could have come from one of several fires at Rocky Flats Plant. Risks from site-wide chemicals should be assessed at individual OUs if they occur there and should not be eliminated simply because the original source is not in that OU. It is important that site-wide chemicals that do not have sources in specific OUs are quantitatively assessed at some point. In this case, evaluating the risk from exposure to soil containing PAHs in the uncertainty section is probably sufficient.

Page 3-4 Rather than a comparison of PAHs in random vs biased samples, a comparison to background might have been more appropriate. This would be consistent with the background comparison was applied to benzoic acid and bis(2-ethylhexyl)phthalate.

Table 3-4 Are there any speciation data on chromium found in OU2 surficial soils? This Memorandum assumes that all chromium is in the less toxic +3 form. Chrome plating, which uses hexavalent chromium, was done at Rocky Flats Plant in the Building 444 plating laboratory. Other spills/disposal of chromium may have occurred at OU2, including one as recently as 1989 in which there was a chromic acid (+6) spill resulting in the contamination of several hillsides adjacent to spray fields. While most chromium in soil is converted with time to the trivalent form, it would still be prudent for DOE to find out whether any of the detected chromium in surface soil is still in the more dangerous hexavalent form.

Page 4-2 The rationale for eliminating barium from consideration in the SE Trenches Area is convincing. However, the rationale is more questionable for Trench T-12, since IHSS boundaries are indefinite, the hits are not deep, and DOE has not eliminated the possibility that the barium could have come from chemicals leaching from the trenches. DOE has not proven that the barium is not waste-related.

Table 4-5 Figure 4-4i shows that tritium was detected in IHSS-related locations, yet this contaminant is not discussed in the text nor shown in any of the tables. What is the rationale for eliminating this contaminant as a COC?

Page 4-5 Table 4-7 (potential COCs without toxicity factors) is mentioned, but is missing. Should this missing table be the same as the subsurface soil part of Table B-5?

Page 4-6 The reference to Table B-4 should probably be to Table B-5, which, however, lists 7 compounds rather than the 8 mentioned in the text. Please explain this discrepancy.

Page 5-2 A number of metals with elevated concentrations in OU2 groundwater were eliminated from consideration based on professional judgement. The elevated concentrations for Mn are considered to be due to local geochemical conditions which are not present in the area of the Background Geochemical Report. This argument, although it may be valid, points to questions about the appropriateness of the site used for that report.

The elevated concentrations of four other metals, Sb, Al, Be, and V, are attributed to higher TSS. The association between higher concentrations of these metals and TSS appears to be valid, but since most domestic wells do not have filters, people might be exposed to unfiltered sediment in their drinking water. Because of this, RAGS recommends that risk assessment be done on unfiltered groundwater samples. Since there are good indications that high concentrations of metals are associated with the high total suspended particles fraction, it would be appropriate to also calculate the risk using the filtered values for these water samples.

The temporal isolation pattern of the exceedence for Sb in some of the wells points to the possibility of poor well development. The cloudy, muddy water reported also supports this possibility.

This section shows that Mn contamination is probably not related to the presence of VOCs. A similar lack of relationship between the other metals and VOCs is not demonstrated. Therefore, the possibility of leaching of Al, Be, and V into groundwater by solvents has not been ruled out.

Page 5-7 The 1,1,2,2-PCA and cis-1,3-dichloropropene hits were temporally isolated detects (March 1992). This was a wet season in a wet year, as mentioned on page 2-3 in the discussion of why subsurface soil samples were taken above a certain level so as not to be contaminated by groundwater contamination. Are these detects related to storm events for surface water? If so, these contaminants may truly be located not far from groundwater in a position to act as a continuing, if sporadic, source, and they should not be thrown out of the risk assessment. Alternatively, Table B-4 shows that, especially for 1,1,2,2-PCA, the reporting limits increased whenever nothing was detected. This observation calls the accuracy of these numbers into

question. In addition, no sampling was reported after November 1992 for those wells shown in Table B-4, even though some of the highest detects are from the last sampling period. Are there any more recent data to verify whether these values are indeed transient?

Table 5-3 Footnote 1 states that nitrite is "a spatially isolated extreme value and is discussed in the text." Where in the text is this discussion? Figure 5-5 shows the high value is in a trench. Therefore, it seems possible that it could be waste-related, given the fact that nitric acid (HNO_3), a potential source of the nitrite, was used in large quantities at Rocky Flats.

Appendix B Risk-based concentrations (RBCs) were not always calculated using the agreed-upon calculation methods and exposure factors. Except for the soil-ingestion pathway, children are not included in the RBC calculations as previously requested by the State. The less conservative construction-worker exposure has been used for subsurface soils instead of the State-requested residential exposure. While no differences in the final list of COCs probably occurred due to this discrepancy, residential exposure parameters should be used later on while defining Areas of Concern.